

SPECIAL REPORTS

The Biggest Battery Breakthrough in a Century: How to Cash In on the \$3 TRILLION Electric Car Revolution

By Luke Lango July 22, 2021

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The car as we know it is on the verge of a transformative change not seen since it was invented. In fact, the whole transportation sector is now poised for its version of 2.0.

I'm not exaggerating when I say this will lead to trillions of dollars in money sloshing around in the coming decades.

We are not the only ones looking to capture a piece of that pie. The “picks and shovels” plays of the industry – the companies that make the parts that go inside the vehicles – want to profit from Transportation 2.0 as well.

It all starts with the electric vehicle (EV). Believe it or not, the first such vehicle to be mass produced, the Toyota Prius, has now been out for more than 20 years. More recently, completely electric vehicles like those from Tesla have hit the market. But even with a 20-year history, penetration of EVs remains very low. **Only 2.5% of all new vehicles sold around the globe are EVs.**

That still small number shows the enormous growth potential in the coming decades. And that growth is already under way. In 2017, the number of new EVs sold globally hit one million for the first time, up from just a few thousand less than 10 years ago.

In 2018, the number of new EVs registered in the U.S. grew 81%. In 2019, the number of new EVs sold around the globe increased 38% to about two million. And in 2020, EV

volumes rose another 41% to about three million.

This growth will only increase for decades.

In fact, the Energy Industry Administration (EIA) calls for sales to more than triple to 6.5 million units by 2024. ARK Investment Management is even more bullish, predicting that 37 million EVs will be sold in 2024. That would be an amazing 79% compound annual growth rate (CAGR) and result in full year revenue of \$1.1 trillion.

Even if we basically split the difference and EV sales increase to 20 million units in the next few years, **it is an easy 10X opportunity for investors.**

As exciting as EVs are, self-driving cars will make the industry even more money. Autonomous vehicles (AVs) are already on our roads in limited numbers, but the story is just now beginning.

A report a few years ago from Intel – and backed by other reputable firms – states that the AV market will be worth \$7 trillion. And I think that is a conservative number. When you think about how it will change life for nearly every person on Earth, it could be closer to \$10 trillion.

To put \$10 trillion into perspective, only two countries in the world have economies bigger than \$5 trillion (the U.S. and China). The total GDP of the entire world is about \$90 trillion. That means the AV market could be bigger than 10% of the GDP of every economy on Earth.

Even if I am wrong and Intel is too optimistic, there is no doubt that trillions of dollars will change changes in the future of transportation. It is not very often that an opportunity this big and with degree of certainty is in front of investors.

This is truly an investment opportunity for the ages – the Roaring 2020s.

This industry isn't just the ultimate prize for long-term investors. It is the ultimate prize for all battery companies as well. With Bloomberg New Energy Finance predicting sales of over 50 million EVs by 2040, there is a whole lot of upside to capture here.

The New Arms Race for Automakers

In January 2019, I unveiled a portfolio of stocks that are leading the charge toward the transportation industry's next generation of technology – solid state batteries.

Through the end of 2020, our battery portfolio had climbed an impressive 243% (including dividends). That figure is strong on its own, but it's even more impressive when you consider that the S&P 500 was up only 53% during the same timeframe. Plus, that time period included some of the most volatile months in the history of the stock market.

You can read about two of my favorite battery manufacturers in the research report called "[The Secret Battery Set to Drive the Multi-Trillion-Dollar Internet of Things Industry](#)." But they aren't the only companies in the race.

Major auto manufacturers are also heavily invested in solid state batteries. These are the next step up from the current lithium-ion batteries. They are a much better alternative because they eliminate the risks of fire, explosion, and leakage.

Today, I'd like to talk about the automakers at the head of the pack when it comes to battery technology.

The first is Toyota, which has been investing in the future of batteries for many years. There is no question it's on the cutting edge of solid state battery technology. It has signed a deal with Panasonic to expand its work on the next generation of battery technology. I'll talk more about this company later on in this report.

Hyundai, through its venture capital unit, is a lead investor in Colorado-based solid state battery company Solid Power. It raised \$20 million from Hyundai, Solvay, a unit of Samsung, and others. And it also has partnerships with the likes of Ford and BMW.

[An article from Quartz](#) in 2018 cited a number of battery experts who believe Solid Power is close to a breakthrough in solid state battery technology. The prototype has a power density of 300 watt hours per kilogram and about 200 charging cycles, which is 20% more than conventional batteries. This is definitely a step in the right direction.

In fact, Solid Power moved onto the next phase in its solid state battery commercialization plan when it opened an in-house production facility in August 2019. The company plans to manufacture batteries for electric vehicles, and it has also contracts in place to produce them for the pharmaceutical, defense, and oil and gas industries.

According to *The Korea Times*, Hyundai expects to have cars powered by solid state batteries on the road by 2025. Assuming that is true, the company should have prototypes ready to go soon. According to industry experts, it takes about five years to design a new car and get the process ready for mass production.

Volkswagen is yet another auto manufacturer that's invested in battery technology, and it has some of the loftiest goals of all regarding EVs. The company is already one of the largest car manufacturers in the world, and if it can meet expectations I look for it to become the largest manufacturer of electric vehicles in the next decade.

But without solid state batteries, Volkswagen will never be able to reach its goals.

The company aims to derive 25% of its 2025 car sales from fully electric vehicles. That may not seem high at first, but given the early stages of the battery industry I can assure you it is ambitious. If met, it would be a game changer.

Since 2012, Volkswagen Group Research has been working with QuantumScape, a spin-off of a Stanford University research group. QuantumScape was founded in 2010 and holds about 200 patents and applications for technology related to solid state batteries. Volkswagen invested \$100 million into QuantumScape in 2018, and together the two companies estimate that a production line of solid state batteries will be available in 2025.

The rest of the group racing to come up with the next generation of battery technology includes large automakers like BMW, battery companies, and a host of new battery technology startups. In other words... any company that relies on batteries for power is preparing for a future with solid state batteries.

The race has begun.

Your Ground-Floor Opportunity in Solid State Batteries

The *Innovation Investor* portfolio is normally reserved for mid- to large-cap companies. We're investing in established companies, with real business operations, that have market caps in excess of \$2 billion.

We do this to limit downside risk. But, risk and reward are closely intertwined. And so, in limiting our downside risk by investing in mid-cap to large-cap stocks, we are also limited our upside potential.

That's why today is your lucky day – because today, **I'm going to give you a ground-floor, explosive, small-cap stock pick in the solid-state battery revolution.**

It is a tiny company that is a major player in the solid-state battery industry. But more importantly, it has a partnership with Toyota.

The company is **Ilika (ILIKF)**.

Ilika is a \$290 million battery company based in the United Kingdom.

I have spent months researching this early-stage trend, and time after time I was led back to Ilika as one of the best pure-play solid state battery companies in the world.

The company has developed a battery that uses a ceramic ion conductor instead of the typical liquid or polymer electrolyte in today's lithium-ion batteries. The batteries can be used in everything from electric vehicles to the booming Internet of Things industry to small wearables that will be everywhere in the future.

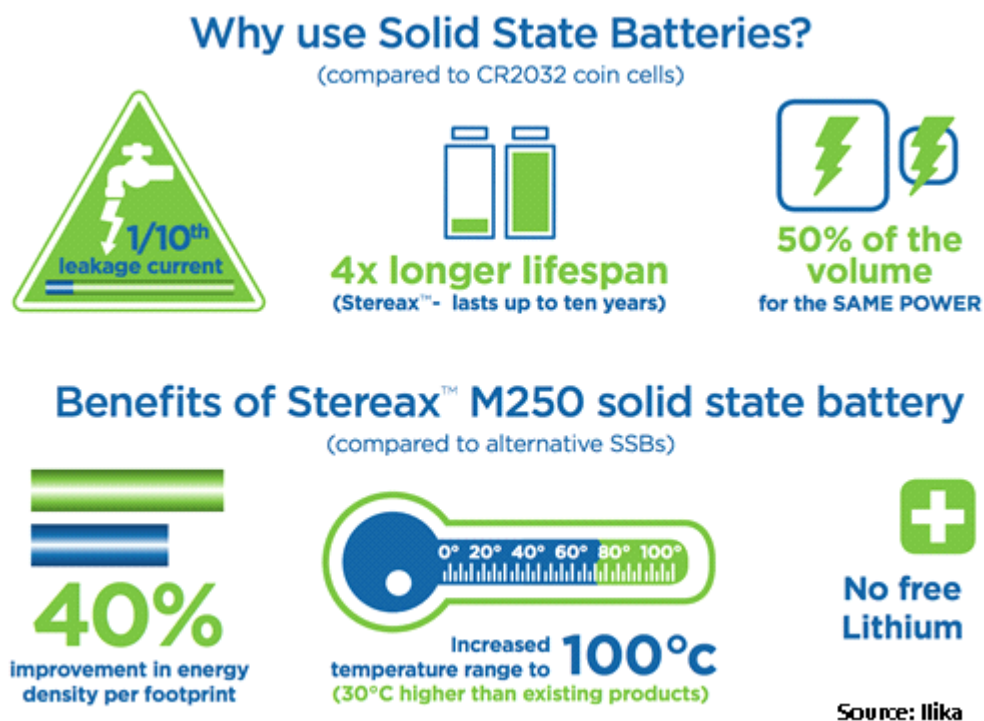
Ilika was founded in 2004 by Professor Brian Hayden from Southampton University in the United Kingdom. It came about thanks to the university's research into material sciences. In the years since the company was launched, it has rolled out a commercially available solid state battery. The battery is very small and currently being used to power sensors in IoT applications.

The big picture goal is for **Ilika to increase the size and scale of the battery so it can power an EV**. We know this is something it is currently working on. In the meantime, though, the batteries available today also have the ability be game changers.

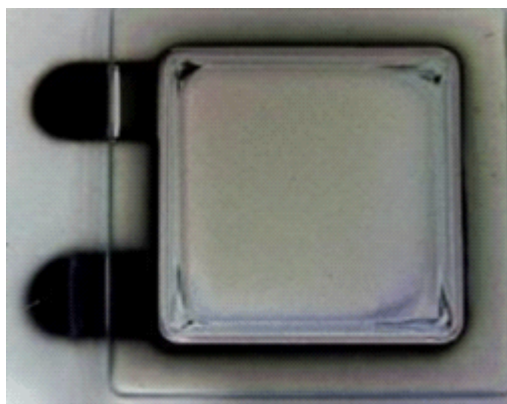
I am very bullish on the future of connectivity and the IoT. And more specifically, I see big opportunities with sensors and the hundreds of billions of them connecting everything worldwide. Of course, sensors need to be powered, and that is where the more stable and longer-lasting solid state batteries are necessary.

The Batteries

Ilika believes (and I agree!) that its solid state batteries have a lot of benefits. They are non-flammable, 6X faster to charge, 2X the energy density, and have 10X lower leakage currents. Check out some of the other benefits below:



Ilika introduced its first two solid state batteries in 2016 and 2017 – the **Stereax M250** and the **Stereax P180**. Both are designed to power IoT devices with the latter able to withstand extreme temperature environments.



Actual Sterex M250 solid state battery

The M250 (pictured above) can operate in temperatures up to 100 degrees Celsius, more than 30 degrees higher than any of its peers. The P180 can withstand temperatures up to 150 degrees Celsius. The IoT industry and some automotive applications require the P180 because of that ability. And as the IoT industry expands, demand is only expected to keep increasing as well.

In the future, Ilika plans to focus on three main areas:

- **Miniaturization:** Create even smaller batteries that deliver smaller currents. The medical device industry has high demand for this type of battery.
- **Capacity:** Increase the energy capacity to handle various functions. This demand is derived from the IoT industry because of the complex devices that will need to be powered.
- **Large Format:** This is all about EVs. And very appropriately, the name of the battery is the Goliath. Ilika already has a decade-old partnership with Toyota, and because of its patents and leadership in the battery industry, other large auto manufacturers are interested in working with it, too.

The Partnerships

Speaking of partnerships, these are imperative when considering a company the size of Ilika for investment. The other key requirement is proven breakthrough technology, and we've already discussed how that is the case here.

Ilika is involved in a laundry list of partnerships. Let me talk about a few:

Toyota: The goal of this partnership is to create advanced battery materials and fuel cell catalysts that will power EVs of the future. The two companies began their collaboration for the research and development of a solid state battery able to power a vehicle in 2008.

The Toyota Research Institute (TRI) injected another \$2.4 million into Ilika in 2018 – part of the larger \$35 million investment being made by TRI over four years. The money is going toward research using artificial intelligence to accelerate discovery of advanced materials used in the battery technology. Ilika envisions that the promising materials identified will be scaled up by Toyota and its suppliers.

This is Ilika's longest running partnership, and it will likely be the most lucrative if the company becomes a leader in solid state batteries.

Titan Wind Energy: This partnership between Ilika and the largest manufacturer of wind turbine products in China was formed in November 2017. The long lifespan and ability to work well in volatile environments make Ilika's solid state batteries a great choice for wind energy. In early 2020, Ilika successfully completed a trial of its solid state battery at an offshore wind facility in collaboration with Titan Wind Energy.

Bioelectronics Company: An unnamed bioelectronics company and Ilika have a collaborative project to develop a solid state battery for miniature medical implants. The two companies believe a breakthrough could lead to the treatment of diseases that currently do not have a cure.

PowerDrive Line Project: Ilika is the lead partner in this project with Honda, Ricardo, the Centre for Process Innovation, and University College London. Its goal is to create a solid state battery for vehicles using Ilika's Goliath battery. This involves the entire process, all the way from the supply chain to developing a battery that can charge a car in less than 25 minutes. The grant total is \$5.54 million, of which Ilika should receive \$2.9 million.

Ilika is involved in several other collaborations in a variety of sectors that range from hard disk drives to aerospace.

The Numbers

In the future, revenue generation will come from three areas:

- Development projects that are funded either by the company and its partners or by grants from organizations, governments, and/or educational institutions
- Intellectual Property (IP) licensing
- Royalties from products that use Ilika's IP

Right now the company is in its first phase, which means all revenue comes from development projects. But in the years ahead, the IP licensing and royalty streams could make up a large portion of total revenue.

Think about what another company would pay for the rights to license solid state battery technology for its products. It doesn't matter if the product is as large as a vehicle or as small as a few millimeters on an IoT device. I think Ilika could potentially see hundreds of millions of dollars annually in licensing and royalties. In other words, the upside is nearly limitless.

Buy ILIKF stock up to \$2.50.

Summing Up

The solid state battery industry hasn't received a lot of media coverage yet, but that means there is a whole lot of opportunity here for us.

As you know, the media is typically the last to alert investors to a new and groundbreaking technology. By the time the covers are printed, the technology has likely already made its way into our everyday lives. That's fine for those who like to stay in the know. But for investors, waiting for the news to break means you are too late to the game. The big money will have already been made in the early moves from the companies profiting from the new breakthroughs.

Those are the companies we have talked about today. They are on the verge of mass producing the next generation of batteries... a technology that will eliminate every risk

and concern related to the current lithium-ion solutions.

After all of the research I have conducted, I am confident that solid state batteries in electric vehicles and IoT devices will happen in the coming years. Therefore, now is the time to start positioning our portfolio for the big profits that are sure to come to the companies involved in the progression of the new technology.

I hope this report has illustrated the potential. I look forward to continuing this prosperous journey together.